

## DEFINITIONS AND SPECIAL INSTRUCTIONS

### 1. Scope of survey

This survey includes firms engaged in manufacturing industrial pumps, (reciprocating, turbine, centrifugal, rotary, diaphragm, and other pumps); domestic water systems; domestic sump pumps; oil well and oil field pumps; hot water heating circulator pumps, and other pumps; air compressors; gas compressors; and vacuum pumps. Excluded from this survey are hand pumps; measuring and dispensing pumps; automotive circulating pumps; hydraulic fluid power pumps; paint-spraying equipment; and compressors for ice making, refrigeration equipment, and air-conditioning units.

### 2. Figures to be reported

Companies with more than one establishment manufacturing the products covered by this survey are requested to complete a separate report form for each location. If you have not received a separate form for each of your establishments, please call the contact shown on the report form or write to U.S. Census Bureau for additional forms.

#### a. Quantity and value of shipments

The figures on quantity and value of shipments should include the physical shipments of all products sold, transferred to other establishments within your company, or shipped on consignment, whether for domestic or export sale. The value represents the net sales price, f.o.b. plant, to the customer or branch to which the products are shipped, net of discounts, allowances, freight charges, and returns. Shipments to your own branches should be assigned the same value as comparable sales to unaffiliated customers, i.e., the value includes an appropriate allocation of company overhead and profit. Products bought and resold without further manufacture should not be included in shipments.

Report all driven units, such as pump-driven sets and compressor-driven sets, and pumps and compressors sold without drivers. In column 1, report the number of pumps and compressors shipped; in column 2, report the value of the units in column 1. This value should represent the value of the pump or compressor only and should not include the value of the driver. The exceptions to this are domestic water system and sump pumps and integral diesel- or gas-engine powered gas compressors. The value of shipments figure for these items should include the value of the driver.

For item codes representing value of drivers, do not report quantities.

#### b. Columnar structure of report

When posting your figures to the original report, please be sure to report the information in the correct columns. These are:

For item codes 1098, 1698, 3298, and 3398:

Column 2 — Value of shipments drivers sold with driven units (Column 1 is not used).

For item codes 1911, 1922, 1933, and 1995:

Column 2 — Value of shipments of parts and attachments sold separately (Column 1 is not used).

For other item codes:

Column 1 — Quantity (Number of pumps or compressors shipped).

Column 2 — Value of shipments of driven units, excluding value of drivers (see instructions, item 2a).

### 3. Definitions

**Pump** — Device for raising, transferring, moving, or pressurizing fluids.

**Compressor** — Device for compressing gases, such as air for motive power or natural gas for the transfer of gas or for the recovery of liquid hydrocarbons.

**Driver** — An electric motor, or a prime mover, such as a steam engine, steam or gas turbine, or internal combustion engine.

#### CENTRIFUGAL PUMPS (item codes 1127–1280)

**Centrifugal pump** — A pump in which the pressure is developed principally by the action of centrifugal force. Pumps in the class with single inlet impellers usually have a specific speed below 4200; with double suction impellers, below 6000. In pumps of this class the liquid normally enters the impeller at the hub and flows radially to the periphery.

**Single stage pump** — A pump in which the total head is developed by one impeller.

**Single suction pump** — A pump equipped with one or more single suction impellers.

**Close coupled pump** — A design in which the impeller is mounted on the motor shaft.

**Frame mounted pump** — A pump design in which the impeller is mounted on a shaft, held in a bearing frame, and coupled to a motor with a flexible coupling.

**Double suction pump** — A pump equipped with one or more double suction impellers.

**Multistage pump** — A pump having two or more impellers acting in series in one casing.

**Definitions — Continued**

*Propeller (or axial flow) pump* — A pump which develops most of its head by the propelling or lifting action of the vanes on the liquid. It has a single inlet impeller with the flow entering axially and discharging nearly axially. Pumps of this type usually have a specific speed above 9000.

*Mixed flow pump* — A pump in which the head is developed partly by centrifugal force and partly by the lift of the vanes of the liquid. This type of pump has a single inlet impeller with the flow entering axially and discharging in an axial and radial direction. Pumps of this type usually have a specific speed from 4200 to 9000.

**VERTICAL TURBINE PUMPS** (*item codes 1281–1284*) — Include submersible pump systems over 5 hp. Report submersible pump systems, 5 hp and under, as domestic water systems, *item codes 1376–1378*.

**RECIPROCATING PUMPS** (*item codes 1285–1286*)

*Direct-acting steam-driven* — A reciprocating pump and a steam engine built together as a unit. The power to drive the pump is furnished by the steam engine.

**ROTARY PUMPS** — *item codes 1288–1297*

*Rotary pump* — A positive displacement pump, consisting of a fixed casing containing gears, cams, screws, vanes, plungers, or similar elements actuated by rotation of the drive shaft. These pumps are characterized by their close running clearances and the absence of suction and discharge valves.

**DOMESTIC WATER SYSTEMS** (*item codes 1367–1390*) — Include submersible pump systems 5 hp and under. Report submersible pump systems over 5 hp as vertical turbine pumps, *item codes 1281–1284*. (See also submersible centrifugal pumps, *item codes 1132–1178*.) Exclude irrigation pumps; report them under industrial pumps by class and type of pump.

*Domestic water system* — A complete water supply pump system for household and farm use, containing driver, tank, and fittings.

*Jet pump* — A pump with built-in jet (ejector) assembly for either shallow or deep well use.

*Non-jet pump* — An electrical reciprocating piston pump for shallow or deep well use.

**Submersible pump** — A pump completely submerged in water (well, pond, reservoir, etc.) which uses a series of impellers and diffusers (stages) on a single shaft or a helical rotor positive displacement design propelled by an oil-filled or water-lubricated motor.

Domestic hand pumps, etc. — Hand, windmill, or engine-driven well pumps not electrically powered.

**OIL-WELL AND OIL-FIELD PUMPS** (*item codes 1701–1721*) — Include pumps specially designed for oil-well and oil-field applications (except boiler feed).

**AIR COMPRESSORS** (*item codes 3301–3340*)

*Stationary air compressor* — An air compressor which is intended for permanent installation and is typically not .

*Portable air compressor* — An air compressor which is mountable on wheels, a skid, or a motor truck so as to be typically mobile.

*Stationary air compressor* — An air compressor which is intended for permanent installation and is typically not mobile.

*Portable air compressor* — An air compressor which is mountable on wheels, a skid, or a motor truck so as to be typically mobile.

*Gas compressors* (*item codes 3342–3356*) — Include engine-compressor units which generally consist of an integral engine compressor block that houses both the engine and compressor. (In such machines the engine pistons and compressor pistons are mounted on a common crankshaft.)

**VACUUM PUMPS** (*item codes 3394–3477*)

*Vacuum pump* — A device for withdrawing air, gas, or air and gas mixtures from piping systems, enclosed vessels, or enclosed spaces, discharging the air to atmosphere, and removing the moisture.

**4. Standard abbreviations**

hp — Horsepower

ANSI — American National Standards Institute

API — American Petroleum Institute

ISO — International Organization for Standardization

FM — Factory Mutual Insurance Certification

UL — Underwriters' Laboratories

PSI — Pounds per square inch

GPM — Gallons per minute

PSIG — Pounds per square inch gauge (represents the differential between atmospheric pressure and output pressure of compressors)

C.F.M. — Cubic feet per minute

**5. Comparability**

If you also report in the Annual Survey of Manufactures (Form MA-10000), the sum of values for item codes shown in column (a) should correspond to the dollar values reported under product class codes indicated in column (b) below:

Current Industrial Reports (Form MA333P)  Item codes (a)	Annual Survey of Manufacturers  Product class codes (b)
1098 through 1800	3339111
1911 through 1995	3339115
3298 through 3388 3398 through 3477	3339121
3900	3339125
3394	3391110

**REFERENCE LIST**

FORM **MA333P**

**PUMPS (EXCEPT HYDRAULIC) AND COMPRESSORS (SHIPMENTS)**

Product code	Item code	Item description
3339111		<b>TOTAL SHIPMENTS (Domestic and export)</b> <b>(Report value in thousands of dollars)</b>
3339111401	<b>1098</b>	<b>INDUSTRIAL PUMPS (Except hydraulic fluid power pumps)</b>  <i>VALUE OF DRIVERS</i> — Include the value of drivers (motors, engines, etc.), sold with driven units reported elsewhere in product class 3339111, on this line — do not report the values of drivers within the values for the driven units
		<b>Centrifugal pumps</b>
3339111411	<b>1127</b>	Sewage type (non-submersible), vertical or horizontal with non-clog impeller: 12" and under
3339111412	<b>1128</b>	More than 12"
3339111424	<b>1132</b>	Submersible effluent pumps (less than 1" solids handling capacity): Less than 1 hp
3339111425	<b>1134</b>	1 hp and over
3339111428	<b>1136</b>	Submersible solids handling pumps (solids 1" to 2" inclusive): ½ hp and under
3339111429	<b>1138</b>	More than ½ hp
333911142C	<b>1142</b>	Submersible nonclog pumps (greater than 2" solids handling capacity): 3" discharge and under
333911142E	<b>1144</b>	Discharge more than 3" but less than 7"
333911142G	<b>1147</b>	7" and over discharge
333911142K	<b>1177</b>	Submersible grinder pumps (incorporating a hardened stainless steel cutter mechanism to macerate the solids into a fine slurry): 2 hp and below
333911142M	<b>1178</b>	More than 2 hp
3339111444	<b>1203</b>	Single and two stage, single and end suction, close coupled with driver: 1" discharge and under
3339111445	<b>1207</b>	Discharge more than 1", up to 2"
3339111447	<b>1208</b>	Over 2" discharge
3339111449	<b>1217</b>	Single and two stage, single suction, in-line, close coupled with driver: 2" discharge and under
333911144A	<b>1218</b>	Over 2" discharge
333911144C	<b>1221</b>	Single stage, single suction, vertical, in-line frame: 2" discharge and under
333911144D	<b>1223</b>	Over 2" discharge
333911144F	<b>1225</b>	Single stage, single suction, frame or foot mounted, metallic pumps (built to National or International Standards ANSI B73 1 or ISO 2858): 2" discharge and under
333911144G	<b>1227</b>	Over 2" discharge
333911144J	<b>1230</b>	Single stage, single suction, frame or foot mounted, non-metallic pumps (built to National or International Standards ANSI B73 1 or ISO 2858): 2" discharge and under
333911144K	<b>1231</b>	Over 2" discharge

**REFERENCE LIST — Continued**

FORM <b>MA333P</b>		
Product code	Item code	Item description
		<b>TOTAL SHIPMENTS (Domestic and export) — Continued</b> <i>(Report value in thousands of dollars)</i>
		<b>INDUSTRIAL PUMPS (Except hydraulic fluid power pumps) — Continued</b>
		<b>Centrifugal pumps — Continued</b>
333911144M 333911144N 333911144R	<b>1233</b> <b>1235</b> <b>1237</b>	Single stage, single suction, frame or foot mounted, non-ANSI, non-ISO, with or without recessed impeller: 1" discharge and under Discharge more than 1", up to 2" Over 2" discharge
3339111451 3339111452 3339111454	<b>1241</b> <b>1243</b> <b>1245</b>	Single stage, single suction, replaceable elastomer lined or hard metal, frame or foot mounted: 1" discharge and under Discharge more than 1", up to 2" Over 2" discharge
3339111456 3339111457	<b>1246</b> <b>1247</b>	Single stage, single suction, centerline mounted: 2" discharge and under Over 2" discharge
3339111459 333911145A 333911145C	<b>1248</b> <b>1249</b> <b>1250</b>	Single stage, axially split, double suction: 4" discharge and under Discharge more than 4", up to 8" Over 8" discharge
333911145E 333911145F 333911145H	<b>1252</b> <b>1253</b> <b>1254</b>	Single stage, radially split, double suction impeller pumps, API-610 compliant: 4" discharge and under Discharge more than 4", up to 8" Over 8" discharge
333911145K 333911145L 333911145N	<b>1256</b> <b>1257</b> <b>1258</b>	Single stage, radially split, double suction impeller pumps, non-API compliant: 4" discharge and under Discharge more than 4", up to 8" Over 8" discharge
3339111461 3339111464 3339111467	<b>1261</b> <b>1262</b> <b>1263</b>	Multistage, single or double suction, diffuser design, radially split case: 4" discharge and under Discharge more than 4", up to 8" Over 8" discharge
333911146C 333911146E 333911146H	<b>1264</b> <b>1265</b> <b>1266</b>	Multistage, single or double suction, volute or diffuser design, axially split case: 4" discharge and under Discharge more than 4", up to 8" Over 8" discharge
3339111471 3339111474 3339111477	<b>1271</b> <b>1272</b> <b>1273</b>	Sealless centrifugal pumps, magnetic drive: 1" discharge and under Discharge more than 1", up to 2" Over 2" discharge

**REFERENCE LIST — Continued**

FORM **MA333P**

Product code	Item code	Item description
		<b>TOTAL SHIPMENTS (Domestic and export) — Continued</b> <i>(Report value in thousands of dollars)</i>
		<b>INDUSTRIAL PUMPS (Except hydraulic fluid power pumps) — Continued</b>
		<b>Centrifugal pumps — Continued</b>
333911147C	<b>1274</b>	Sealless centrifugal pumps, canned motor:
333911147E	<b>1275</b>	1" discharge and under
333911147H	<b>1276</b>	Discharge more than 1", up to 2" Over 2" discharge
3339111481	<b>1277</b>	Propeller and mixed flow, horizontal and vertical (includes Vertical Turbine over 36"):
3339111484	<b>1278</b>	36" and under Over 36"
333911148K	<b>1279</b>	All other centrifugal pumps
333911148M	<b>1280</b>	6" discharge and under Over 6" discharge
		<b>Vertical Turbine Pumps not exceeding 36" discharge (including deep-well; see item code 1278 for &gt; 36")</b>
3339111493	<b>1281</b>	Pump with submersible motor
3339111498	<b>1282</b>	Bowl diameter 6" and under Bowl diameter over 6"
333911149F	<b>1283</b>	Pump and bowl assemblies through 36" (All column and shaft lengths, including Factory Mutual Insurance Certification or Underwriters' Laboratories approved vertical turbine fire pumps; deep well and short coupled pumps included; except can and pot type)
333911149N	<b>1284</b>	Can and pot type (pump and bowl assemblies, suction can and pot type)
		<b>Reciprocating Pumps</b>
33391114C3	<b>1285</b>	Direct-acting steam-driven
33391114C7	<b>1286</b>	Driven by electric motor, engine, or steam turbine: reciprocating piston, plunger or diaphragm (not air operated) pumps
33391114D5	<b>1287</b>	<b>Diaphragm Pumps (air operated)</b>
		<b>Rotary Pumps</b>
33391114R1	<b>1288</b>	100 PSI and under designed pressure:
33391114R3	<b>1289</b>	10 GPM and under, designed capacity
33391114R5	<b>1290</b>	11 to 99 GPM, designed capacity
33391114R7	<b>1291</b>	100 to 299 GPM, designed capacity 300 GPM and over, designed capacity
		101 to 249 PSI, designed pressure:
33391114RA	<b>1292</b>	10 GPM and under, designed capacity
33391114RC	<b>1293</b>	11 to 99 GPM, designed capacity
33391114RE	<b>1294</b>	100 GPM and over, designed capacity
		250 to 500 PSI, designed pressure:
33391114RJ	<b>1295</b>	10 GPM and under, designed capacity
33391114RM	<b>1296</b>	11 GPM and over, designed capacity
33391114RR	<b>1297</b>	Over 500 PSI, designed pressure
33391114T5	<b>1298</b>	<b>Other Industrial Pumps, not elsewhere classified</b>

**REFERENCE LIST — Continued**

FORM <b>MA333P</b>		
Product code	Item code	Item description
		<b>TOTAL SHIPMENTS (Domestic and export) — Continued</b> <b>(Report value in thousands of dollars)</b>
3339111		<b>DOMESTIC WATER SYSTEMS (including drivers)</b> — Include the value of drivers (motors, engines, etc ), sold with shipments of driven units reported in product class 3339111, within the values of shipments of products with which they are sold.
3339111167	<b>1367</b>	Nonsubmersible pump systems (jet and nonjet; including drivers)
3339111172	<b>1376</b>	Submersible pump systems, 5 hp and under (including drivers): Up to 1 hp
3339111175	<b>1377</b>	Over 1 hp to 3 hp
3339111178	<b>1378</b>	Over 3 hp to 5 hp
3339111190	<b>1390</b>	Domestic hand and windmill pumps, pump jacks, and cylinders (sold separately; including drivers)
3339111		<b>DOMESTIC SUMP PUMPS, 1 hp and under, including drivers</b> — Include the value of drivers (motors, engines, etc ), sold with shipments of driven units reported in product class 3339111, within the values of shipments of products with which they are sold.
3339111235	<b>1435</b>	Pedestal, including drivers
3339111238	<b>1438</b>	Submersible, including drivers: 1/3 hp and under
3339111239	<b>1439</b>	Over 1/3 hp
		<b>OIL-WELL AND OIL-FIELD PUMPS (except boiler feed)</b>
3339111335	<b>1698</b>	VALUE OF DRIVERS — Include the value of drivers (motors, engines, etc.), sold with driven units reported elsewhere in product class 3339111, on this line — <i>do not</i> report the values of drivers within the values for the driven units.
3339111341	<b>1701</b>	Subsurface pumps for oil well pumping
3339111352	<b>1711</b>	Mud pumps (slush pumps)
3339111363	<b>1721</b>	Other oil well and oilfield pumps — <i>specify kind</i>  (Report power pumps for water flooding under code 1286 )
		<b>OTHER PUMPS, not elsewhere classified (including drivers)</b>
3339111580	<b>1800</b>	Other pumps (except automotive pumps, hand pumps, measuring and dispensing or service station pumps, and hydraulic fluid power pumps), including oil burner and appliance pumps, fire engine pumps, laboratory pumps, packaged pump units, hot water heating circulator pumps, etc. — <i>specify kind</i>
3339115		<b>PARTS AND ATTACHMENTS FOR PUMPS AND PUMPING EQUIPMENT whose product codes begin with 333911</b>
3339115144	<b>1911</b>	Aftermarket (spare) parts for centrifugal pumps
3339115155	<b>1922</b>	Aftermarket (spare) parts for vertical turbine pumps
3339115166	<b>1933</b>	Aftermarket (spare) parts for reciprocating pumps
3339115199	<b>1995</b>	Other

**REFERENCE LIST — Continued**

FORM **MA333P**

Product code	Item code	Item description
3339121		<b>TOTAL SHIPMENTS (Domestic and export) — Continued</b> <i>(Report value in thousands of dollars)</i>
3339121115	<b>3298</b>	<b>AIR AND GAS COMPRESSORS</b>  VALUE OF DRIVERS — Include the value of drivers (motors, engines, etc.), sold with driven units reported elsewhere in product class 3339121, on this line — <i>do not</i> report the values of drivers within the values for the driven units. <i>Exception:</i> Report drivers for integral engine stationary reciprocating gas compressors (item code 3345) on the line for that product, <i>not</i> on this line.  <b>Air Compressors, new</b>  Stationary:  Reciprocating, single acting:  3301      1 ½ hp and under 3302      Over 1 ½ hp to 5 hp 3303      6–25 hp 3304      26 hp and over  3305      Reciprocating, double acting  Rotary positive:  3307      Discharge pressure 50 PSIG and under, all hp sizes  Discharge pressure of 51 PSIG and over:  3311      40 hp and under 3312      41–150 hp 3313      151–300 hp 3315      301 hp and over  3316      Centrifugal and axial  Portable:  3329      Under 11 C.F.M 3333      11–74 C.F.M 3334      75–124 C.F.M 3336      125–249 C.F.M 3337      250–599 C.F.M 3340      600 C.F.M. and over
3339121121	<b>3301</b>	
3339121124	<b>3302</b>	
3339121127	<b>3303</b>	
333912112A	<b>3304</b>	
3339121133	<b>3305</b>	
3339121144	<b>3307</b>	
3339121151	<b>3311</b>	
3339121154	<b>3312</b>	
3339121157	<b>3313</b>	
333912115A	<b>3315</b>	
3339121166	<b>3316</b>	
3339121171	<b>3329</b>	
3339121174	<b>3333</b>	
3339121177	<b>3334</b>	
333912117A	<b>3336</b>	
333912117E	<b>3337</b>	
333912117H	<b>3340</b>	



**REFERENCE LIST — Continued**

FORM **MA333P**

Product code	Item code	Item description
		<b>TOTAL SHIPMENTS (Domestic and export) — Continued</b> <i>(Report value in thousands of dollars)</i>
		<b>AIR AND GAS COMPRESSORS — Continued</b>
		<b>Gas Compressors, new</b>
		Stationary, centrifugal and axial:
3339121183	<b>3342</b>	Natural gas
3339121188	<b>3343</b>	All other gases
		Stationary reciprocating:
3339121199	<b>3345</b>	Integral engine, including drivers
		Other than integral engine:
33391211A1	<b>3351</b>	1,000 hp and under
33391211A9	<b>3353</b>	1,001 hp and over
33391211CC	<b>3356</b>	Stationary rotary positive
33391211FF	<b>3388</b>	<b>Other compressors</b> (except for refrigeration, air-conditioning, and ice making), including rebuilt compressors, compressor packages, and packaged compressor units assembled from purchased compressors — <i>specify kind</i>
3391110		<b>LABORATORY VACUUM PUMPS</b>
3391110123	<b>3394</b>	Laboratory vacuum pumps (including drivers and replacement parts)
3339121		<b>VACUUM PUMPS (excluding laboratory)</b>
3339121225	<b>3398</b>	VALUE OF DRIVERS — Include the value of drivers (motors, engines, etc.), sold with driven units reported elsewhere in product class 3339121, on this line — do <i>not</i> report the values of drivers within the values for the driven units
		Low vacuum, 29.5 in mercury vacuum and lower:
3339121261	<b>3461</b>	Under 5 hp
3339121265	<b>3465</b>	5 hp and over
		High vacuum, 29.6 in mercury vacuum and over:
3339121273	<b>3473</b>	Under 5 hp
3339121277	<b>3477</b>	5 hp and over
3339125		<b>PARTS AND ATTACHMENTS FOR AIR AND GAS COMPRESSORS AND VACUUM PUMPS</b>
3339125111	<b>3900</b>	Parts and attachments for air and gas compressors and vacuum pumps (except laboratory)

10/7/03

## DEFINITIONS AND SPECIAL INSTRUCTIONS

### 1. Scope of survey

This survey includes firms engaged in manufacturing industrial pumps, (reciprocating, turbine, centrifugal, rotary, diaphragm, and other pumps); domestic water systems; domestic sump pumps; oil well and oil field pumps; hot water heating circulator pumps, and other pumps; air compressors; gas compressors; and vacuum pumps. Excluded from this survey are hand pumps; measuring and dispensing pumps; automotive circulating pumps; hydraulic fluid power pumps; paint-spraying equipment; and compressors for ice making, refrigeration equipment, and air-conditioning units.

### 2. Figures to be reported

Companies with more than one establishment manufacturing the products covered by this survey are requested to complete a separate report form for each location. If you have not received a separate form for each of your establishments, please call the contact shown on the report form or write to U.S. Census Bureau for additional forms.

#### a. Quantity and value of shipments

The figures on quantity and value of shipments should include the physical shipments of all products sold, transferred to other establishments within your company, or shipped on consignment, whether for domestic or export sale. The value represents the net sales price, f.o.b. plant, to the customer or branch to which the products are shipped, net of discounts, allowances, freight charges, and returns. Shipments to your own branches should be assigned the same value as comparable sales to unaffiliated customers, i.e., the value includes an appropriate allocation of company overhead and profit. Products bought and resold without further manufacture should not be included in shipments.

Report all driven units, such as pump-driven sets and compressor-driven sets, and pumps and compressors sold without drivers. In column 1, report the number of pumps and compressors shipped; in column 2, report the value of the units in column 1. This value should represent the value of the pump or compressor only and should not include the value of the driver. The exceptions to this are domestic water system and sump pumps and integral diesel- or gas-engine powered gas compressors. The value of shipments figure for these items should include the value of the driver.

For item codes representing value of drivers, do not report quantities.

#### b. Columnar structure of report

When posting your figures to the original report, please be sure to report the information in the correct columns. These are:

For item codes 1098, 1698, 3298, and 3398:

Column 2 — Value of shipments drivers sold with driven units (Column 1 is not used).

For item codes 1911, 1922, 1933, and 1995:

Column 2 — Value of shipments of parts and attachments sold separately (Column 1 is not used).

For other item codes:

Column 1 — Quantity (Number of pumps or compressors shipped).

Column 2 — Value of shipments of driven units, excluding value of drivers (see instructions, item 2a).

### 3. Definitions

**Pump** — Device for raising, transferring, moving, or pressurizing fluids.

**Compressor** — Device for compressing gases, such as air for motive power or natural gas for the transfer of gas or for the recovery of liquid hydrocarbons.

**Driver** — An electric motor, or a prime mover, such as a steam engine, steam or gas turbine, or internal combustion engine.

#### CENTRIFUGAL PUMPS (item codes 1127–1280)

**Centrifugal pump** — A pump in which the pressure is developed principally by the action of centrifugal force. Pumps in the class with single inlet impellers usually have a specific speed below 4200; with double suction impellers, below 6000. In pumps of this class the liquid normally enters the impeller at the hub and flows radially to the periphery.

**Single stage pump** — A pump in which the total head is developed by one impeller.

**Single suction pump** — A pump equipped with one or more single suction impellers.

**Close coupled pump** — A design in which the impeller is mounted on the motor shaft.

**Frame mounted pump** — A pump design in which the impeller is mounted on a shaft, held in a bearing frame, and coupled to a motor with a flexible coupling.

**Double suction pump** — A pump equipped with one or more double suction impellers.

**Multistage pump** — A pump having two or more impellers acting in series in one casing.

---

**Quantity and value of new orders.** The sales value of orders received during the current reporting period for products and services to be delivered immediately or at some future date. Also represents the net sales value of contract change documents that increase or decrease the sales value of the orders to which they are related, when the parties concerned are in substantial agreement as to the amount involved. Included as orders are only those that are supported by binding legal documents such as signed contracts or letter contracts.

**Quantity and value of shipments.** The figures on quantity and value of shipments represent physical shipments of all products sold, transferred to other establishments of the same company, or shipped on consignment, whether for domestic or export sale. The value represents the net sales price, f.o.b. plant, to the customer or branch to which the products are shipped, net of discounts, allowances, freight charges, and returns. Shipments to a company's own branches are assigned the same value as

comparable appropriate allocation of company overhead and profit. Products bought and resold without further manufacture are excluded.

**Stocks.** Total quantity of ending finished inventory.

**Unfilled orders (backlog).** Calculated by adding net new orders and subtracting net sales from the backlog at the end of the preceding year.

#### **HISTORICAL NOTE**

Data on pumps and compressors have been collected by the Census Bureau since 1960. Data on hydraulic fluid power pumps and motors formerly collected on this survey are now included in the Current Industrial Report, MA35N, Fluid Power Products. Historical data may be obtained from Current Industrial Reports available at your local Federal Depository Library.

**Definitions — Continued**

*Propeller (or axial flow) pump* — A pump which develops most of its head by the propelling or lifting action of the vanes on the liquid. It has a single inlet impeller with the flow entering axially and discharging nearly axially. Pumps of this type usually have a specific speed above 9000.

*Mixed flow pump* — A pump in which the head is developed partly by centrifugal force and partly by the lift of the vanes of the liquid. This type of pump has a single inlet impeller with the flow entering axially and discharging in an axial and radial direction. Pumps of this type usually have a specific speed from 4200 to 9000.

**VERTICAL TURBINE PUMPS** (*item codes 1281–1284*) — Include submersible pump systems over 5 hp. Report submersible pump systems, 5 hp and under, as domestic water systems, *item codes 1376–1378*.

**RECIPROCATING PUMPS** (*item codes 1285–1286*)

*Direct-acting steam-driven* — A reciprocating pump and a steam engine built together as a unit. The power to drive the pump is furnished by the steam engine.

**ROTARY PUMPS** — *item codes 1288–1297*

*Rotary pump* — A positive displacement pump, consisting of a fixed casing containing gears, cams, screws, vanes, plungers, or similar elements actuated by rotation of the drive shaft. These pumps are characterized by their close running clearances and the absence of suction and discharge valves.

**DOMESTIC WATER SYSTEMS** (*item codes 1367–1390*) — Include submersible pump systems 5 hp and under. Report submersible pump systems over 5 hp as vertical turbine pumps, *item codes 1281–1284*. (See also submersible centrifugal pumps, *item codes 1132–1178*.) Exclude irrigation pumps; report them under industrial pumps by class and type of pump.

*Domestic water system* — A complete water supply pump system for household and farm use, containing driver, tank, and fittings.

*Jet pump* — A pump with built-in jet (ejector) assembly for either shallow or deep well use.

*Non-jet pump* — An electrical reciprocating piston pump for shallow or deep well use.

*Submersible pump* — A pump completely submerged in water (well, pond, reservoir, etc.) which uses a series of impellers and diffusers (stages) on a single shaft or a helical rotor positive displacement design propelled by an oil-filled or water-lubricated motor.

Domestic hand pumps, etc. — Hand, windmill, or engine-driven well pumps not electrically powered.

**OIL-WELL AND OIL-FIELD PUMPS** (*item codes 1701–1721*) — Include pumps specially designed for oil-well and oil-field applications (except boiler feed).

**AIR COMPRESSORS** (*item codes 3301–3340*)

*Stationary air compressor* — An air compressor which is intended for permanent installation and is typically not .

*Portable air compressor* — An air compressor which is mountable on wheels, a skid, or a motor truck so as to be typically mobile.

*Stationary air compressor* — An air compressor which is intended for permanent installation and is typically not mobile.

*Portable air compressor* — An air compressor which is mountable on wheels, a skid, or a motor truck so as to be typically mobile.

*Gas compressors* (*item codes 3342–3356*) — Include engine-compressor units which generally consist of an integral engine compressor block that houses both the engine and compressor. (In such machines the engine pistons and compressor pistons are mounted on a common crankshaft.)

**VACUUM PUMPS** (*item codes 3394–3477*)

*Vacuum pump* — A device for withdrawing air, gas, or air and gas mixtures from piping systems, enclosed vessels, or enclosed spaces, discharging the air to atmosphere, and removing the moisture.

**4. Standard abbreviations**

hp — Horsepower

ANSI — American National Standards Institute

API — American Petroleum Institute

ISO — International Organization for Standardization

FM — Factory Mutual Insurance Certification

UL — Underwriters' Laboratories

PSI — Pounds per square inch

GPM — Gallons per minute

PSIG — Pounds per square inch gauge (represents the differential between atmospheric pressure and output pressure of compressors)

C.F.M. — Cubic feet per minute

**5. Comparability**

If you also report in the Annual Survey of Manufactures (Form MA-10000), the sum of values for item codes shown in column (a) should correspond to the dollar values reported under product class codes indicated in column (b) below:

Current Industrial Reports (Form MA333P)  Item codes (a)	Annual Survey of Manufacturers  Product class codes (b)
1098 through 1800	3339111
1911 through 1995	3339115
3298 through 3388 3398 through 3477	3339121
3900	3339125
3394	3391110

**REFERENCE LIST**

FORM **MA333P**

**PUMPS (EXCEPT HYDRAULIC) AND COMPRESSORS (SHIPMENTS)**

Product code	Item code	Item description
3339111		<b>TOTAL SHIPMENTS (Domestic and export)</b> <b>(Report value in thousands of dollars)</b>
3339111401	<b>1098</b>	<b>INDUSTRIAL PUMPS (Except hydraulic fluid power pumps)</b>  <i>VALUE OF DRIVERS</i> — Include the value of drivers (motors, engines, etc.), sold with driven units reported elsewhere in product class 3339111, on this line — do not report the values of drivers within the values for the driven units
		<b>Centrifugal pumps</b>
3339111411	<b>1127</b>	Sewage type (non-submersible), vertical or horizontal with non-clog impeller: 12" and under
3339111412	<b>1128</b>	More than 12"
3339111424	<b>1132</b>	Submersible effluent pumps (less than 1" solids handling capacity): Less than 1 hp
3339111425	<b>1134</b>	1 hp and over
3339111428	<b>1136</b>	Submersible solids handling pumps (solids 1" to 2" inclusive): ½ hp and under
3339111429	<b>1138</b>	More than ½ hp
333911142C	<b>1142</b>	Submersible nonclog pumps (greater than 2" solids handling capacity): 3" discharge and under
333911142E	<b>1144</b>	Discharge more than 3" but less than 7"
333911142G	<b>1147</b>	7" and over discharge
333911142K	<b>1177</b>	Submersible grinder pumps (incorporating a hardened stainless steel cutter mechanism to macerate the solids into a fine slurry): 2 hp and below
333911142M	<b>1178</b>	More than 2 hp
3339111444	<b>1203</b>	Single and two stage, single and end suction, close coupled with driver: 1" discharge and under
3339111445	<b>1207</b>	Discharge more than 1", up to 2"
3339111447	<b>1208</b>	Over 2" discharge
3339111449	<b>1217</b>	Single and two stage, single suction, in-line, close coupled with driver: 2" discharge and under
333911144A	<b>1218</b>	Over 2" discharge
333911144C	<b>1221</b>	Single stage, single suction, vertical, in-line frame: 2" discharge and under
333911144D	<b>1223</b>	Over 2" discharge
333911144F	<b>1225</b>	Single stage, single suction, frame or foot mounted, metallic pumps (built to National or International Standards ANSI B73 1 or ISO 2858): 2" discharge and under
333911144G	<b>1227</b>	Over 2" discharge
333911144J	<b>1230</b>	Single stage, single suction, frame or foot mounted, non-metallic pumps (built to National or International Standards ANSI B73 1 or ISO 2858): 2" discharge and under
333911144K	<b>1231</b>	Over 2" discharge

**REFERENCE LIST — Continued**

FORM <b>MA333P</b>		
Product code	Item code	Item description
		<b>TOTAL SHIPMENTS (Domestic and export) — Continued</b> <i>(Report value in thousands of dollars)</i>
		<b>INDUSTRIAL PUMPS (Except hydraulic fluid power pumps) — Continued</b>
		<b>Centrifugal pumps — Continued</b>
333911144M 333911144N 333911144R	<b>1233</b> <b>1235</b> <b>1237</b>	Single stage, single suction, frame or foot mounted, non-ANSI, non-ISO, with or without recessed impeller: 1" discharge and under Discharge more than 1", up to 2" Over 2" discharge
3339111451 3339111452 3339111454	<b>1241</b> <b>1243</b> <b>1245</b>	Single stage, single suction, replaceable elastomer lined or hard metal, frame or foot mounted: 1" discharge and under Discharge more than 1", up to 2" Over 2" discharge
3339111456 3339111457	<b>1246</b> <b>1247</b>	Single stage, single suction, centerline mounted: 2" discharge and under Over 2" discharge
3339111459 333911145A 333911145C	<b>1248</b> <b>1249</b> <b>1250</b>	Single stage, axially split, double suction: 4" discharge and under Discharge more than 4", up to 8" Over 8" discharge
333911145E 333911145F 333911145H	<b>1252</b> <b>1253</b> <b>1254</b>	Single stage, radially split, double suction impeller pumps, API-610 compliant: 4" discharge and under Discharge more than 4", up to 8" Over 8" discharge
333911145K 333911145L 333911145N	<b>1256</b> <b>1257</b> <b>1258</b>	Single stage, radially split, double suction impeller pumps, non-API compliant: 4" discharge and under Discharge more than 4", up to 8" Over 8" discharge
3339111461 3339111464 3339111467	<b>1261</b> <b>1262</b> <b>1263</b>	Multistage, single or double suction, diffuser design, radially split case: 4" discharge and under Discharge more than 4", up to 8" Over 8" discharge
333911146C 333911146E 333911146H	<b>1264</b> <b>1265</b> <b>1266</b>	Multistage, single or double suction, volute or diffuser design, axially split case: 4" discharge and under Discharge more than 4", up to 8" Over 8" discharge
3339111471 3339111474 3339111477	<b>1271</b> <b>1272</b> <b>1273</b>	Sealless centrifugal pumps, magnetic drive: 1" discharge and under Discharge more than 1", up to 2" Over 2" discharge

**REFERENCE LIST — Continued**

FORM <b>MA333P</b>		
Product code	Item code	Item description
		<b>TOTAL SHIPMENTS (Domestic and export) — Continued</b> <i>(Report value in thousands of dollars)</i>
		<b>INDUSTRIAL PUMPS (Except hydraulic fluid power pumps) — Continued</b>
		<b>Centrifugal pumps — Continued</b>
333911147C	<b>1274</b>	Sealless centrifugal pumps, canned motor:
333911147E	<b>1275</b>	1" discharge and under
333911147H	<b>1276</b>	Discharge more than 1", up to 2" Over 2" discharge
3339111481	<b>1277</b>	Propeller and mixed flow, horizontal and vertical (includes Vertical Turbine over 36"):
3339111484	<b>1278</b>	36" and under Over 36"
333911148K	<b>1279</b>	All other centrifugal pumps
333911148M	<b>1280</b>	6" discharge and under Over 6" discharge
		<b>Vertical Turbine Pumps not exceeding 36" discharge (including deep-well; see item code 1278 for &gt; 36")</b>
3339111493	<b>1281</b>	Pump with submersible motor
3339111498	<b>1282</b>	Bowl diameter 6" and under Bowl diameter over 6"
333911149F	<b>1283</b>	Pump and bowl assemblies through 36" (All column and shaft lengths, including Factory Mutual Insurance Certification or Underwriters' Laboratories approved vertical turbine fire pumps; deep well and short coupled pumps included; except can and pot type)
333911149N	<b>1284</b>	Can and pot type (pump and bowl assemblies, suction can and pot type)
		<b>Reciprocating Pumps</b>
33391114C3	<b>1285</b>	Direct-acting steam-driven
33391114C7	<b>1286</b>	Driven by electric motor, engine, or steam turbine: reciprocating piston, plunger or diaphragm (not air operated) pumps
33391114D5	<b>1287</b>	<b>Diaphragm Pumps (air operated)</b>
		<b>Rotary Pumps</b>
33391114R1	<b>1288</b>	100 PSI and under designed pressure:
33391114R3	<b>1289</b>	10 GPM and under, designed capacity
33391114R5	<b>1290</b>	11 to 99 GPM, designed capacity
33391114R7	<b>1291</b>	100 to 299 GPM, designed capacity 300 GPM and over, designed capacity
		101 to 249 PSI, designed pressure:
33391114RA	<b>1292</b>	10 GPM and under, designed capacity
33391114RC	<b>1293</b>	11 to 99 GPM, designed capacity
33391114RE	<b>1294</b>	100 GPM and over, designed capacity
		250 to 500 PSI, designed pressure:
33391114RJ	<b>1295</b>	10 GPM and under, designed capacity
33391114RM	<b>1296</b>	11 GPM and over, designed capacity
33391114RR	<b>1297</b>	Over 500 PSI, designed pressure
33391114T5	<b>1298</b>	<b>Other Industrial Pumps, not elsewhere classified</b>



**REFERENCE LIST — Continued**

FORM <b>MA333P</b>		
Product code	Item code	Item description
		<b>TOTAL SHIPMENTS (Domestic and export) — Continued</b> <b>(Report value in thousands of dollars)</b>
3339111		<b>DOMESTIC WATER SYSTEMS (including drivers)</b> — Include the value of drivers (motors, engines, etc ), sold with shipments of driven units reported in product class 3339111, within the values of shipments of products with which they are sold.
3339111167	<b>1367</b>	Nonsubmersible pump systems (jet and nonjet; including drivers)
3339111172	<b>1376</b>	Submersible pump systems, 5 hp and under (including drivers): Up to 1 hp
3339111175	<b>1377</b>	Over 1 hp to 3 hp
3339111178	<b>1378</b>	Over 3 hp to 5 hp
3339111190	<b>1390</b>	Domestic hand and windmill pumps, pump jacks, and cylinders (sold separately; including drivers)
3339111		<b>DOMESTIC SUMP PUMPS, 1 hp and under, including drivers</b> — Include the value of drivers (motors, engines, etc ), sold with shipments of driven units reported in product class 3339111, within the values of shipments of products with which they are sold.
3339111235	<b>1435</b>	Pedestal, including drivers
3339111238	<b>1438</b>	Submersible, including drivers: 1/3 hp and under
3339111239	<b>1439</b>	Over 1/3 hp
		<b>OIL-WELL AND OIL-FIELD PUMPS (except boiler feed)</b>
3339111335	<b>1698</b>	VALUE OF DRIVERS — Include the value of drivers (motors, engines, etc.), sold with driven units reported elsewhere in product class 3339111, on this line — <i>do not</i> report the values of drivers within the values for the driven units.
3339111341	<b>1701</b>	Subsurface pumps for oil well pumping
3339111352	<b>1711</b>	Mud pumps (slush pumps)
3339111363	<b>1721</b>	Other oil well and oilfield pumps — <i>specify kind</i>  (Report power pumps for water flooding under code 1286 )
		<b>OTHER PUMPS, not elsewhere classified (including drivers)</b>
3339111580	<b>1800</b>	Other pumps (except automotive pumps, hand pumps, measuring and dispensing or service station pumps, and hydraulic fluid power pumps), including oil burner and appliance pumps, fire engine pumps, laboratory pumps, packaged pump units, hot water heating circulator pumps, etc. — <i>specify kind</i>
3339115		<b>PARTS AND ATTACHMENTS FOR PUMPS AND PUMPING EQUIPMENT whose product codes begin with 333911</b>
3339115144	<b>1911</b>	Aftermarket (spare) parts for centrifugal pumps
3339115155	<b>1922</b>	Aftermarket (spare) parts for vertical turbine pumps
3339115166	<b>1933</b>	Aftermarket (spare) parts for reciprocating pumps
3339115199	<b>1995</b>	Other

**REFERENCE LIST — Continued**

FORM <b>MA333P</b>		
Product code	Item code	Item description
3339121		<b>TOTAL SHIPMENTS (Domestic and export) — Continued</b> <i>(Report value in thousands of dollars)</i>
3339121115	<b>3298</b>	<b>AIR AND GAS COMPRESSORS</b>  VALUE OF DRIVERS — Include the value of drivers (motors, engines, etc.), sold with driven units reported elsewhere in product class 3339121, on this line — <i>do not</i> report the values of drivers within the values for the driven units. <i>Exception:</i> Report drivers for integral engine stationary reciprocating gas compressors (item code 3345) on the line for that product, <i>not</i> on this line.  <b>Air Compressors, new</b>  Stationary:  Reciprocating, single acting:  3301      1 ½ hp and under 3302      Over 1 ½ hp to 5 hp 3303      6–25 hp 3304      26 hp and over  3305      Reciprocating, double acting  Rotary positive:  3307      Discharge pressure 50 PSIG and under, all hp sizes  Discharge pressure of 51 PSIG and over:  3311      40 hp and under 3312      41–150 hp 3313      151–300 hp 3315      301 hp and over  3316      Centrifugal and axial  Portable:  3329      Under 11 C.F.M 3333      11–74 C.F.M 3334      75–124 C.F.M 3336      125–249 C.F.M 3337      250–599 C.F.M 3340      600 C.F.M. and over
3339121121	<b>3301</b>	
3339121124	<b>3302</b>	
3339121127	<b>3303</b>	
333912112A	<b>3304</b>	
3339121133	<b>3305</b>	
3339121144	<b>3307</b>	
3339121151	<b>3311</b>	
3339121154	<b>3312</b>	
3339121157	<b>3313</b>	
333912115A	<b>3315</b>	
3339121166	<b>3316</b>	
3339121171	<b>3329</b>	
3339121174	<b>3333</b>	
3339121177	<b>3334</b>	
333912117A	<b>3336</b>	
333912117E	<b>3337</b>	
333912117H	<b>3340</b>	

**REFERENCE LIST — Continued**

FORM <b>MA333P</b>		
Product code	Item code	Item description
		<b>TOTAL SHIPMENTS (Domestic and export) — Continued</b> <i>(Report value in thousands of dollars)</i>
		<b>AIR AND GAS COMPRESSORS — Continued</b>
		<b>Gas Compressors, new</b>
		Stationary, centrifugal and axial:
3339121183	<b>3342</b>	Natural gas
3339121188	<b>3343</b>	All other gases
		Stationary reciprocating:
3339121199	<b>3345</b>	Integral engine, including drivers
		Other than integral engine:
33391211A1	<b>3351</b>	1,000 hp and under
33391211A9	<b>3353</b>	1,001 hp and over
33391211CC	<b>3356</b>	Stationary rotary positive
33391211FF	<b>3388</b>	<b>Other compressors</b> (except for refrigeration, air-conditioning, and ice making), including rebuilt compressors, compressor packages, and packaged compressor units assembled from purchased compressors — <i>specify kind</i>
3391110		<b>LABORATORY VACUUM PUMPS</b>
3391110123	<b>3394</b>	Laboratory vacuum pumps (including drivers and replacement parts)
3339121		<b>VACUUM PUMPS (excluding laboratory)</b>
3339121225	<b>3398</b>	VALUE OF DRIVERS — Include the value of drivers (motors, engines, etc.), sold with driven units reported elsewhere in product class 3339121, on this line — do <i>not</i> report the values of drivers within the values for the driven units
		Low vacuum, 29.5 in mercury vacuum and lower:
3339121261	<b>3461</b>	Under 5 hp
3339121265	<b>3465</b>	5 hp and over
		High vacuum, 29.6 in mercury vacuum and over:
3339121273	<b>3473</b>	Under 5 hp
3339121277	<b>3477</b>	5 hp and over
3339125		<b>PARTS AND ATTACHMENTS FOR AIR AND GAS COMPRESSORS AND VACUUM PUMPS</b>
3339125111	<b>3900</b>	Parts and attachments for air and gas compressors and vacuum pumps (except laboratory)

10/7/03

# Appendix.

## General CIR Survey Information, Explanation of General Terms and Historical Note

---

### GENERAL

The CIR program has been providing monthly, quarterly, and annual measures of industrial activity for many years. Since 1904, with its cotton and fats and oils surveys, the CIR program has formed an essential part of an integrated statistical system involving the quinquennial economic census, manufacturing sector, and the annual survey of manufactures. The CIR surveys, however, provide current statistics at a more detailed product level than either of the other two statistical programs.

The primary objective of the CIR program is to produce timely, accurate data on production and shipments of selected products. The data are used to satisfy economic policy needs and for market analysis, forecasting, and decision making in the private sector. The product-level data generated by these surveys are used extensively by individual firms, trade associations, and market analysts in planning or recommending marketing and legislative strategies, particularly if their industry is significantly affected by foreign trade. Although production and shipments information are the two most common data items collected, the CIR program collects other measures also such as inventories, orders, and consumption. These surveys measure manufacturing activity in important commodity areas such as textiles and apparel, chemicals, primary metals, computer and electronic components, industrial equipment, aerospace equipment, and consumer goods.

The CIR program uses a unified data collection, processing, and publication system. The U.S. Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic census, manufacturing sector. The manufacturing sector provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is too large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. The CIR program includes a group of mandatory and voluntary surveys. Typically the monthly and quarterly surveys are conducted on a voluntary basis. Those companies that choose not to respond to the voluntary surveys are required to submit a mandatory annual counterpart corresponding to the more frequent survey.

### NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (NAICS), 1997

The adoption of the North American Industry Classification System (NAICS) in the 1997 Economic Census has had a major impact on the comparability of current and historic data. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those that left manufacturing are logging and portions of publishing. Prominent among the industries that came into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. The net effect of the classification changes are such that if the 1997 value of shipments data for all manufacturers were tabulated on an SIC basis, it would be approximately 3 percent higher.

Listed below are the NAICS sectors:

- 21 Mining
- 22 Utilities
- 23 Construction
- 31-33 Manufacturing
- 42 Wholesale Trade
- 44-45 Retail Trade
- 48-49 Transportation and Warehousing
- 51 Information
- 52 Finance and Insurance
- 53 Real Estate and Rental and Leasing
- 54 Professional, Scientific, and Technical Services
- 55 Management of Companies and Enterprises
- 56 Administrative and Support and Waste Management and Remediation Services
- 61 Educational Services
- 62 Health Care and Social Assistance
- 71 Arts, Entertainment, and Recreation
- 72 Accommodation and Food Services
- 81 Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

---

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

## FUNDING

The Census Bureau funds most of the surveys. However, a number of surveys are paid for either fully or partially by other Federal Government agencies or private trade associations. A few surveys are mandated, but all are authorized by Title 13 of the United States Code.

## RELIABILITY OF DATA

Survey error may result from several sources including the inability to obtain information about all cases in the survey, response errors, definitional difficulties, differences in the interpretation of questions, mistakes in recording or coding the reported data, and other errors of collection, response, coverage, and estimation. These nonsampling errors also occur in complete censuses. Although no direct measurement of the biases due to these nonsampling errors has been obtained, precautionary steps were taken in all phases of the collection, processing, and tabulation of the data in an effort to minimize their influence.

A major source of bias in the published estimates is the imputing of data for nonrespondents, for late reporters, and for data that fail logic edits. Missing figures are imputed based on period-to-period movements shown by reporting firms. A figure is considered to be an impute if the value was not directly reported on the questionnaire, directly derived from other reported items, directly available from supplemental sources, or obtained from the respondent during the analytical review phase. Imputation generally is limited to a maximum of 10 percent for any one data cell. Figures with imputation rates greater than 10 percent are suppressed or footnoted. The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual yearly movements for nonrespondents may or may not closely agree with the imputed movements. The range of difference between the actual and imputed figures is assumed to be small. The degree of uncertainty regarding the accuracy of the published data increases as the percentage of imputation increases. Figures with imputation rates above 10 percent should be used with caution.

## DATA REVISIONS

Statistics for previous years may be revised as the result of corrected figures from respondents, late reports for which imputations were originally made, or other corrections. Data that have been revised by more than 5 percent from previously published data are indicated by footnotes.

## DISCLOSURE

The Census Bureau collects the CIR data under the authority of Title 13, United States Code, which specifies that the information can only be used for statistical purposes and cannot be published or released in any manner that would identify a person, household, or establishment. "D" indicates that data in the cell have been suppressed to avoid disclosure of information pertaining to individual companies.

## EXPLANATION OF GENERAL TERMS

**Capacity.** The maximum quantity of a product that can be produced in a plant in 1 day if operating for 24 hours. Includes the capacity of idle plants until the plant is reported to be destroyed, dismantled, or abandoned.

**Consumption.** Materials used in producing or processing a product or otherwise removing the product from the inventory.

**Exports.** Includes all types of products shipped to foreign countries, or to agents or exporters for reshipment to foreign countries.

**Gross shipments.** The quantity or value of physical shipments from domestic establishments of all products sold, transferred to other establishments of the same company, or shipped on consignment, whether for domestic or export sale or use. Shipments of products purchased for resale are omitted. Shipments of products made under toll arrangements are included.

**Interplant transfers.** Shipments to other domestic plants within a company for further assembly, fabrication, or manufacture.

**Inventories.** The quantity or value of finished goods, work in progress, and materials on hand.

**Machinery in place.** The number of machines of a particular type in place as of a particular date whether the machinery was used for production, prototype, or sampling, or was idle. Machinery in place includes all machinery set up in operating positions.

**Net receipts.** Derived by subtracting the materials held at the end of the previous month from the sum of materials used during the current month.

**Production.** The total volume of products produced, including: products sold; products transferred or added to inventory after adjustments for breakage, shrinkage, and obsolescence, plus any other inventory adjustment; and products that undergo further manufacture at the same establishment.

**Quantities produced and consumed.** Quantities of each type of product produced by a company for internal consumption within that same company.

---

**Quantity and value of new orders.** The sales value of orders received during the current reporting period for products and services to be delivered immediately or at some future date. Also represents the net sales value of contract change documents that increase or decrease the sales value of the orders to which they are related, when the parties concerned are in substantial agreement as to the amount involved. Included as orders are only those that are supported by binding legal documents such as signed contracts or letter contracts.

**Quantity and value of shipments.** The figures on quantity and value of shipments represent physical shipments of all products sold, transferred to other establishments of the same company, or shipped on consignment, whether for domestic or export sale. The value represents the net sales price, f.o.b. plant, to the customer or branch to which the products are shipped, net of discounts, allowances, freight charges, and returns. Shipments to a company's own branches are assigned the same value as comparable appropriate

allocation of company overhead and profit. Products bought and resold without further manufacture are excluded.

**Stocks.** Total quantity of ending finished inventory.

**Unfilled orders (backlog).** Calculated by adding net new orders and subtracting net sales from the backlog at the end of the preceding year.

#### **HISTORICAL NOTE**

Data on pumps and compressors have been collected by the Census Bureau since 1960. Data on hydraulic fluid power pumps and motors formerly collected on this survey are now included in the Current Industrial Report, MA333N, Fluid Power Products. Historical data may be obtained from Current Industrial Reports available at your local Federal Depository Library.